

## ABSTRACT OF THE INVENTION

The invention provides a device for selective molecular recognition, the device comprising a sensing portion, wherein said sensing portion includes a substrate having coated thereon a layer comprising a hyperbranched compound having:

- (1) a polymer backbone portion that is at least partly randomly branched;
- (2) at least one pendant group extending from the polymer backbone portion; and
- (3) at least one halogen substituted alcohol or phenol group substituted at the pendant group(s) of the polymer backbone portion.

The compound of the invention preferably has the general formula:



wherein A is the hyperbranched backbone portion of the polymer;

L and M are independently selected pendant groups of said polymer backbone;

X and Y are independently selected halogen substituted alcohol or phenol groups;

q and r are independently selected and at least 1; and

$n$  is at least 3.

The device is used to detect the molecules of a hydrogen bond accepting vapor such as organophosphorus or nitroaromatic species.